

13/05/07-11:01

8

US 08/809,620 (TE20070509)

Reply to Office Action 04/20/07

Amendments on July 12, 2006 - Reference (TE20060526)

Amendments to the prior version of claims dated november 4, 1999

1 (twice amended)- Telescope optical device comprising a mirror and a device actuating  
5 the mirror,

characterized in that the mirror and the actuating device are ~~independent concave free~~  
concave membranes (called membranous mirror and actuating membrane) without contact  
between them, or with an other device, free at their peripheries and tied by their central  
parts to the telescope..

10 Claim 2 to claim 13 are previously canceled

14 (canceled)

15 (canceled)

16 (canceled)

17 (canceled)

15 18 (canceled)

19 (canceled)

Claim 20 to claim 43 are previously canceled

44 Optical device according to claim 1 characterized in that the distance between the  
actuating membrane and the membranous mirror is monitored permanently by capacitive  
20 coupling between said actuating membrane and said membranous mirror.

45 (new) - Telescope optical device according to claim 1,

characterized in that there are two levels of control to give at the free membranous mirror  
a perfect shape :

In a first level, an aproximate shape is given to the free actuating membrane by  
25 interaction of a magnetic fields tied to the telescope with magnetic fields generated by  
actuating membrane;

in a second level, a perfect shape is given to the free membranous mirror by electrostatic  
interaction of the free actuating membrane with the free membranous mirror.

46 (new) - Telescope optical device according to claim 1,

30 characterized in that by use of the capacitive coupling between the conductive layer of the  
mirror and specific electrodes of the actuating membrane, the spread electronic integrated  
in the actuating membrane acts for the self-stabilisation of the shape of the system mirror--  
actuating membrane

47 (new - (15 third amended)) Optical device according to claim 1 characterized in that,  
35 ~~for their folding, the concave actuating membrane and the concave membranous mirror are~~  
~~made quasi plane by the formation of concentric circular undulations obtained by a~~  
~~succession of centred distortion alternately concave and convex, and the quasi plane one~~  
~~thus obtained rolled up on itself according to a diameter> for its folding, the concave~~  
membranous mirror is deformed by the formation of concentric circular ondulations

13/05/07-11:01

8

US 08/809,620 (TE20070509)

Reply to Office Action 04/20/07

13/05/07-11:01

9

US 08/809,620 (TE20070509)

Reply to Office Action 04/20/07

obtained by a succession of centered distortions alternately concave and convex, altering the pure concave surface of the membranous mirror in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

5 and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.

48 (new - (15 fourth amended)) Optical device according to claim 1 characterized in that, for their folding, ~~the concave actuating membrane and the concave membranous mirror are made quasi plane by the formation of concentric circular undulations obtained by a succession of centred distortion alternately concave and convex, and the quasi plane one thus obtained rolled up on itself according to a diameter for its folding. the concave membranous actuating membrane is deformed by the formation of concentric circular undulations obtained by a succession of centered distortions alternately concave and convex, altering the pure concave surface of the membranous mirror in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so~~

10 small as one wishes, in view of the number of waves so great as one wishes.

15 and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.

20

25

30

35

13/05/07-11:01

9

US 08/809,620 (TE20070509)

Reply to Office Action 04/20/07